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# Quaternary Fault and Fold Database of the United States

**As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the interactive fault map.**

## Central Stone Cabin Valley fault (Class A) No. 1352

**Last Review Date: 1998-07-15**

***citation for this record:*** **Sawyer, T.L., compiler, 1998, Fault number 1352, Central Stone Cabin Valley fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, https://earthquakes.usgs.gov/hazards/qfaults, accessed 12/14/2020 02:05 PM.**

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| **Synopsis** | This long zone of subparallel intrabasin normal faults bounds a low ridge separating Stone Cabin Valley from West Stone Cabin Valley and steps a few kilometers east and continues along either side of a higher ridge adjacent to Hot Creek Range. This fault appears to merge northward with the Eastern Monitor Range fault zone [1349]. Reconnaissance photogeologic mapping of fault-related features and limited study of scarp morphology are the sources of data. Trench investigations and studies of scarp morphology have not been conducted along the fault. |
| **Name comments** | Refers to faults mapped by Schell (1981 #2844), Dohrenwend and others (1996 #2846), and Keith (1987 #2933). Schell (1981 #2844) named the fault the Central Stone Cabin fault, and dePolo (1998 #2845) named it the Stone Cabin Valley fault. We retain the |

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| | earlier name here. The fault extends along a low ridge between Stone Cabin Valley and West Stone Cabin Valley from about 10 km south of U.S. Highway 6, across the highway and Stone Cabin Creek. The fault continues along the eastern side West Stone Cabin Valley, bounding a second ridge, and into southernmost Little Fish Lake Valley.<br><br>**Fault ID:** Refers to fault 133 on Plate A7 in Schell (1981 #2844) and to fault T13 of dePolo (1998 #2845). |
| **County(s) and State(s)** | NYE COUNTY, NEVADA |
| **Physiographic province(s)** | BASIN AND RANGE |
| **Reliability of location** | Good<br>Compiled at 1:100,000 scale.<br><br>*Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and of Dohrenwend and others (1996 #2846). Mapping by Schell (1981 #2843; 1981 #2844) based on photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and subsequent field verification. Mapping by Dohrenwend and others (1996 #2846) based on photogeologic analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to scale of the photographs. |
| **Geologic setting** | This long zone of subparallel intrabasin normal faults bounds a low ridge separating Stone Cabin Valley from West Stone Cabin Valley and steps a few kilometers east and continues along either side of a higher ridge adjacent to Hot Creek Range. The fault appears to merge to the north with the Eastern Monitor Range fault zone [1349]. |
| **Length (km)** | 61 km. |
| **Average strike** | N13°E |
| **Sense of movement** | Normal |

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| | *Comments:* (Schell, 1981 #2844; Keith, 1987 #2933) |
| **Dip Direction** | E; W |
| **Paleoseismology studies** | |
| **Geomorphic expression** | The fault is marked by some abrupt, well-defined scarps juxtaposing Quaternary alluvium against bedrock (Dohrenwend and others, 1996 #2846) and local, moderately high (less than or equal to 6m), well-defined (less than or equal to 26? slope angle) scarps and lineaments on Quaternary alluvium (Schell, 1981 #2844). dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 30 m (maximum 43 m). |
| **Age of faulted surficial deposits** | Late Pleistocene (Schell, 1981 #2844) and Quaternary alluvium (Keith, 1987 #2933; Dohrenwend and others, 1996 #2846). |
| **Historic earthquake** | |
| **Most recent prehistoric deformation** | late Quaternary (<130 ka)<br><br>*Comments:* Although timing of the most recent event is not well constrained, Schell (1981 #2844) suggested late Pleistocene based on scarp morphology and inferred age of surficial deposits. However, Dohrenwend and others (1996 #2846) indicate Pleistocene based on a reconnaissance photogeologic study, which agrees with map relationships in Keith (1987 #2933). We assign a younger age category based on the morphometric data reported by Schell (1981 #2844). |
| **Recurrence interval** | |
| **Slip-rate category** | Less than 0.2 mm/yr<br><br>*Comments:* No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.131 mm/yr based on an empirical relationship between his preferred maximum basal facet height and vertical slip rate. The size of the facets (tens to hundreds of meters, as measured from topographic maps) indicates they are the result of many seismic cycles, and thus the derived slip rate reflects a long-term average. The late Quaternary characteristics of this fault (overall |

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| | geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest the slip rate during this period is low. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault. |
| **Date and Compiler(s)** | 1998<br>Thomas L. Sawyer, Piedmont Geosciences, Inc. |
| **References** | #2845 dePolo, C.M., 1998, A reconnaissance technique for estimating the slip rate of normal-slip faults in the Great Basin, and application to faults in Nevada, U.S.A.: Reno, University of Nevada, unpublished Ph.D. dissertation, 199 p.<br><br>#2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., Analysis of Nevada's metal-bearing mineral resources: Nevada Bureau of Mines and Geology Open-File Report 96-2, 1 pl., scale 1:1,000,000.<br><br>#2933 Keith, W.J., 1987, Preliminary geologic map of the McCann 15-minute quadrangle, Nye County, Nevada: U.S. Geological Survey Open-File Report 87-425, scale 1:62,500.<br><br>#2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p.<br><br>#2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 29 p., 11 pls., scale 1:250,000. |